DOCUMENT RESUME

ED 182 168 SE 029 952

AUTHOR Belli, Gabriella
TITLE A Survey of Placement Policies for Ninth-Grade Mathematics. Research Series No. 61.
INSTITUTION Michigan State Univ., East Lansing. Inst. for Research on Teaching.
SPONS AGENCY National Inst. of Education (DHEW), Washington, D.C.
PUB DATE Oct 79
CONTRACT 400-76-0073
NOTE 24p.; Contains occasional light and broken type
AVAILABLE FROM Institute for Research on Teaching, College of Education, Michigan State University, 252 Erickson Hall, East Lansing, MI 48824 ($2.50)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Counselor Attitudes; *Decision Making; *Educational Research; *Enrollment Influences; Mathematics Curriculum; Secondary Education; *Secondary School Mathematics; Standardized Tests; *Student Placement; Surveys

ABSTRACT

A survey of ninth-grade student placement policies in Michigan secondary schools was conducted. Two central questions were: (1) Who makes the placement decision; and (2) What are the most frequently used criteria in making that decision? Two-hundred Michigan secondary schools were selected at random and questionnaires were sent to chairpersons of their mathematics departments. Based on responses from 121 schools, the results indicate that teachers' and counselors' recommendations carry the most weight in the placement decision and that little importance seems to be given to any type of standardized test information. (Author/MK)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

U S DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
Gabriella Belli

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

ERIC

SE

ED182168

Institute for Research on Teaching

College of Education — Michigan State University

SE 029 952

Research Series No. 61

A SURVEY OF PLACEMENT POLICIES FOR NINTH-GRADE MATHEMATICS

Gabriella Belli

Published By

The Institute for Research on Teaching
252 Erickson Hall
Michigan State University
East Lansing, Michigan 48824

October 1979

This work is sponsored in part by the Institute for Research on Teaching, College of Education, Michigan State University. The Institute for Research on Teaching is funded primarily by the Program for Teaching and Instruction of the National Institute of Education, United States Department of Health, Education, and Welfare. The opinions expressed in this publication do not necessarily reflect the position, policy, or endorsement of the National Institute of Education. (Contract No. 400-76-0073)

Institute for Research on Teaching

Teachers' thoughts and decisions are the focus of studies currently under way at Michigan State University's Institute for Research on Teaching (IRT). The IRT, founded in April 1976 with a $3.6 million grant from the National Institute of Education, has major projects investigating teacher decision-making, including studies of reading diagnosis and remediation, classroom management strategies, instruction in the areas of language arts, reading, and mathematics, teacher education, teacher planning, effects of external pressures on teachers' decisions, and teachers' perceptions of student affect. Researchers from many different disciplines cooperate in IRT research. In addition, public school teachers work at IRT as half-time collaborators in research, helping to design and plan studies, collect data, and analyze results. The Institute publishes research reports, conference proceedings, occasional papers, and a free quarterly newsletter for practitioners. For more information or to be placed on the IRT mailing list please write to: The IRT Editor, 252 Erickson, MSU, East Lansing, Michigan 48824.

Director: Judith E. Lanier

Associate Directors: Lawrence W. Lezotte and Andrew C. Porter

Editorial Staff:

Lawrence W. Lezotte, coordinator of Communications/Dissemination
Linda Shalaway, IRT editor
Janet Flegg, assistant editor

(Lee S. Shulman, co-director with Judith E. Lanier from 1976-1978, and director in 1979 is on a one-year leave at the Center for Advanced Study in the Behavioral Sciences.)

Abstract

A survey of ninth-grade math student placement policies in Michigan secondary schools was conducted. Two central questions were: (1) Who makes the placement decision? and (2) What are the most frequently used criteria in making that decision? Two-hundred Michigan secondary schools were selected at random and questionnaires were sent to chairpersons of their mathematics departments. Based on responses from 121 schools, the results indicate that teachers' and counselors' recommendations carry the most weight in the placement decision and that little importance seems to be given to any type of standardized test information.

A Survey of Placement Policies for Ninth-Grade Mathematics

Gabriella Belli[1]

General Mathematics[2] is generally disliked both by teachers and pupils (Baumann & Carter, 1976; Dodes, 1967; Shulte, 1970). Ballew (1974) states that general math courses "share with each other a low level of esteem (and) are looked down upon by students, teachers, parents, and administrators in most schools" (p. 101).

Students dislike being in general math classes because it marks them as less intelligent than their peers in algebra classes. House (1975) contends that

> The course in which a student is enrolled may be related to his perception of the evaluation that others hold for him. This is especially likely in mathematics classes, where enrollment in algebra is commonly assumed to imply that the student has the potential to succeed in college preparatory mathematics courses. Enrollment in non-algebra courses generally carries the opposite connotation. (p. 246)

Students, parents, and teachers generally assume that if students are enrolled in a general mathematics course, they are incapable of success at the college level.

A nation-wide survey of high-school students' perceptions of their math teachers supported the claim that "Students' attitudes and learnings

---

[1]Gabriella Belli, formerly a research intern with IRT's General Mathematics Project, is now an intern with the Content Determinants Program.

[2]The term "general mathematics" is used here to indicate any ninth-grade non-algebra course. This would include courses entitled Basic Math, Remedial Math, Fundamentals, Applied Math, Pre-Algebra, and the like. Although their titles and their contents vary, their students all evidence similar problems: low math ability, poor motivation, and a general dislike for mathematics.

are directly influenced by the personal qualities of teachers and by the classroom climate they create" (Cooper & Petrosky, 1976, p. 227). Discussions with teachers about their general math classes indicate feelings of frustration and perceived difficulty in managing and teaching such classes. In two massive reviews of research in the area of attitudes and achievement in mathematics, Aiken (1970, 1976) concludes that the results point to a definite correlation between teachers' attitudes and students' attitudes and achievement.

Research on teacher expectancies has resulted in two rival hypotheses to explain that correlation: (1) differential teacher expectations influence teacher behavior, which in turn produces student behavior in accord with initial expectations (Brophy & Good, 1970); and (2) student achievement influences teacher expectations and behavior (Dusek & O'Connell, 1973; West & Anderson, 1976). In a substudy of the Beginning Teacher Evaluation Study aimed at answering the question "Do teacher expectations produce differential academic growth?" this was reported:

> The findings suggest that although self-induced teacher expectations are generally well founded, and not negatively biased against minority students, males or females, when teachers hold higher versus lower expectations for similar average students, the difference in the subsequent achievement can be as much as one standard deviation apart. (Lockheed, Note 1)

Students typically enter general mathematics classes with pre-established low levels of achievement, and teachers' initial expectations for them are low. Thus, regardless of which hypothesis is more accurate, the resulting environment is not conducive to student success.

A Survey of Placement Policies

During the past year, researchers with IRT's General Mathematics Project have been studying several general mathematics classes. Students

in these classes had low math ability, poor motivation, and a general dislike for mathematics. We were especially interested in how these students were placed in general math, in view of the research indicating that placement of students in classes of varying ability may be functionally related to their success or failure (Esposito, 1973: Flowers, 1966; Tuckman & Bierman, Note 2).

To better understand one aspect of this situation and to help provide direction for future work, a survey of ninth-grade math student placement policies in Michigan secondary schools was conducted. Two central questions were: (1) Who makes the placement decision? and (2) What are the most frequently used criteria in making that decision? The survey also attempted to document the relative frequency of algebra versus non-algebra courses, the proportions of students in each type of course, and the proportion of schools having mathematics course requirements for the college and non-college bound student.

Two hundred Michigan secondary schools were selected at random and questionnaires were sent to chairpersons of their mathematics departments. Responses were received from 121 schools (60.5%). The schools were classified into three groups according to size, and the returns were almost equal across the three groups:[3]

Size Category	Enrollment	Number of Returns
small	100-500	44
medium	501-1000	42
large	1001-3000	32

Three schools did not provide information regarding total enrollment.

[3]Chi-square analyses indicated that there was a significant relationship between school size and only one of the variables examined: school policies on math requirements for college-bound students.

Criteria for Placement Decisions

In the survey, chairpersons were asked to rate the frequency of use of nine criteria for making the placement decision. These criteria were chosen to reflect four main areas of potential input to the decision: (1) math pretests, (2) teachers' or counselors' recommendations, (3) parents' or students' requests, and (4) grades. Each one could be rated on a five-point scale indicating extent of use from "always" to "never". Table 1 shows percentages (based on 120 schools) across the five categories for each of the criteria.

Table 1

Frequency of Use for Placement Criteria

	Always	Frequently	Sometimes	Seldom	Never
MATH TESTS:					
school designed placement	15.8	12.5	13.3	5.8	52.5
standardized achievement	20.0	16.7	21.7	9.2	32.5
diagnostic	10.8	18.3	24.2	5.8	40.8
RECOMMENDATIONS:					
counselors	24.2	32.5	17.5	5.0	20.8
8th-grade teachers	56.7	34.2	5.8	1.7	1.7
REQUESTS:					
parents	13.3	23.3	44.2	12.5	6.7
students	12.5	31.7	34.2	10.0	11.7
GRADES:					
8th-grade mathematics	29.2	42.5	14.2	1.7	12.5
8th-grade G.P.A.(all subjects)	1.7	12.5	24.2	17.5	44.2

Examination of the "always" rating provides an indication of the most important criterion and shows that teachers' recommendations are always used in more than half the schools surveyed. Note that teachers' recommendations fall in second place among criteria used frequently, behind eighth-grade math scores and slightly ahead of counselors' recommenda-

tions. Of interest is the fact that criteria never used by many of the schools are the three types of math test (school designed placement tests, standardized achievement tests, and diagnostic tests). The only other criterion never used in a large portion of the schools was the student's overall grade point average for eighth grade.

To find out the relative weight allotted each of the various placement criteria, chairpersons were asked to rank order them (see Table 2).

Table 2

Rankings of Placement Criteria
by Importance to Placement Decision

		Percentages		
	Median Rank	Ranked first	Ranked second	Not ranked
School placement test score	5.0	6.6	7.4	62.8
Standardized Achievement scores	3.8	13.2	8.3	38.0
Math diagnostic test scores	3.6	11.6	9.9	43.0
8th-grade teachers' recommendations	1.4	50.4	27.3	5.8
Counselors' recommendations	2.9	11.6	19.0	28.9
Parent requests	3.9	7.4	15.7	19.8
Student requests	3.5	13.2	16.5	20.7
8th-grade math scores	2.7	9.9	26.4	19.0

As can be seen, the highest percentage of both first and second ranks go to teachers' recommendations (50.4% and 27.3%, respectively). Each of the other criteria are ranked in first place less than 15% of the time.

The results from the placement criteria ranking and the frequency of their use are consistent with each other. Both indicate that of all criteria surveyed, teachers' and counselors' recommendations carry the most weight in the placement decision, followed by eighth-grade math scores; little importance was placed on other forms of test scores.

Perhaps the fact that teachers' opinions are so highly regarded results in a similar regard for the eighth-grade math scores, since it is the teachers who provide them. And, since counselors help students to select appropriate study programs, it follows that their opinions and recommendations would also be highly ranked.

Decision Makers

Although teachers' recommendations are considered the single most important variable in the student placement decision, teachers are not primarily responsible for the final decision. Table 3 presents the percentage of times each of seven individuals was rated as being involved in the final decision. These percentages are based on 115 schools and include both individual responsibility and joint involvement in the decision-making process.

Table 3

Involvement in Placement Decisions

Decision Maker	Percentage of Times Involved
Counselor	40.0
Principal	32.2
Teacher	31.3
Student	17.4
Chairperson of Math Department	15.7
Parent	7.8
Assistant Principal	5.2

Although no consistent pattern for joint decisions emerges, the data indicate that the teacher and counselor are most often involved. Usually students follow the recommendations made for course selection, but in many schools either the student or the parent may override the school's decision. Perhaps the reason principals are rated so highly is that, in case of a dispute, they have the final authority.

Course Offerings

An analysis of the types of mathematics course offered at the ninth-grade level indicates that Algebra I is offered in the greatest number of schools (99.2%), with general mathematics falling in second place (63.3%). Table 4 gives the number and percentage of schools offering each of 10 courses (percentages are based on 120 schools).

Table 4

Course Offerings

Course	Percentage of Schools Offering Course	Number of Schools Offering Course
Algebra I	99.2	119
General Math	63.3	76
Geometry	48.3	58
Pre & Elem. Alg.	47.5	48
Algebra II	40.4	48
Remedial Math	35.8	43
Basic Math	35.8	43
Business Math	26.7	32
Consumer Math	18.3	22
Applied Math	8.3	10

Since the distinctions among some of these course titles is vague, two aggregated categories were formed The broad term "general mathematics" was used to include general math, remedial math, and basic math. The term "vocational mathematics" was used to include business math, consumer math, and applied math. When considered according to these categories, the percentage of schools offering one or more of the general math courses grows to 88.6% (106 schools), and those offering vocational math courses increases to 43.3% (52 schools). Although algebra I courses are offered by a higher percentage of schools than general or vocational math are, the need for so many non-algebra math courses at the secondary level warrants concern and study.

It would be useful to consider the actual number of ninth-grade students who are in these various courses. Unfortunately, the majority of the respondents failed to provide enrollment figures broken down by course. Based on the schools that did provide information, an average of 43% of ninth-grade students are in algebra I courses (based on 95 schools) and 38% are in general math courses (based on 66 schools).

Osterndorf and Horn (1976) report that according to a national survey of public secondary schools conducted in 1972-73, remedial math had a considerable enrollment and approximately 40% of the California and Georgia schools offered remedial math in grades 9-12. They also reported that general mathematics was available in 83.2% of the schools having grades 9-12, with 65% of these offering it at grade 9. Enrollments in both advanced and elementary general math courses was 14.7% of total school enrollments. The percentage of ninth-grade students enrolled was not provided. They stated that this course was to serve students who were not going to college and needed to fulfill a one-year math requirement.

Required Math

The final information requested concerned school policies on mathematics requirements for college and non-college bound students. Of the 117 schools that responded to these questions, slightly more than half (54%) have requirements for college bound students. A chi-square analysis of the degree to which this requirement and school size are related proved to be significant ($p < .04$). Of the schools having such requirements, most were in the medium size category (45%), with the rest almost equally split between small and large schools. Within the large schools, there was an even split between those that required courses (50%) and those that did not (50%). For small schools, the split was close to half (43% did, 57% did not). However, in medium size schools, 70% required specific math courses for the college bound.

Overall, more schools had requirements for non-college bound students (over 60%) than for college-bound students. Typically, non-college bound students were required to take at least one year of any math course. While most of the schools requiring some math for these students were also of medium size, the relationship between this variable and school size was not significant.

Conclusion

The results of this survey indicate that primary responsiblity for student placement in ninth-grade math classes rests on teachers and counselors. Given the potential damage a wrong decision can do, we should examine further how teachers and counselors assess students. This is particularly important since standardized test results are not often used.

This questionnaire was completed by chairpersons of mathematics departments, and it is possible that they are only pa tially aware of the

placement process. For example, perhaps teachers and counselors use standardized test results to assess pupils and math chairpersons are not aware of this. Counselors in large schools may not have the opportunity to know all the students. Therefore, it seems reasonable that they rely on standardized test results. Further study of the ninth-grade math placement decision should take such issues into consideration.

The following questions are being posed as a potential follow-up to the present study: (1) On what basis do teachers and counselors make placement decisions? (2) How objective or subjective are these decisions? (3) How accurate are the decisions now made in correctly placing students? Answers to these questions may help in determining the validity of current practices or, possibly, in improving them.

Reference Notes

1. Lockheed, M.E. Some determinants and consequences of teacher expectations concerning pupil performance. Beginning Teacher Evaluation Study: Phase II. Final Report: Volume V.2. Princeton, New Jersey: Educational Testing Service, 1975.

2. Tuckman, B.W., & Bierman, M.L. Beyond Pygmalion: Galatea in the Schools. Paper presented at the meeting of the American Educational Research Association, New York, April, 1971.

References

Aiken, L.R. Attitudes toward mathematics. Review of Educational Research, 1970, 40, 551-596.

Aiken, L.R. Update on attitudes and other affective variables in learning mathematics. Review of Educational Research, 1976, 46, 293-311.

Ballew, H. Restoration of prestige to practical mathematics. High School Journal, 1974, 58, 101-108.

Bauman, J.R., & Carter, L.L. Individualization, project learning, and team teaching in general mathematics. School Science and Mathematics, 1976, 76.1, 63-67.

Brophy, J.E., & Good, T.L. Teachers' communication of differential expectations for children's classroom performance: Some empirical data. Journal of Educational Psychology, 1970, 61, 365-374.

Cooper, C.R., & Petrosky, A. Secondary school students' perceptions of math teachers and math classes. The Mathematics Teacher, 1976, 69, 226-233.

Dodes, I.A. Some comments on general mathematics. The Mathematics Teacher, 1967, 60, 246-251.

Dusek, J.B., & O'Connell, E.J. Teacher expectancy effects on the achievement test performance of elementary school children. Journal of Educational Psychology, 1973, 65, 371-377.

Esposito, D. Homogeneous and heterogeneous ability grouping: Principal findings and implications for evaluating and designing more effective educational environments. Review of Educational Research, 1973, 43, 163-179.

Flowers, C.E. Effects of an arbitrary accelerated group placement on the tested academic achievement of educationally disadvantaged students. (Doctoral dissertation, Columbia University, N.Y., 1966). Dissertation Abstracts International, 1966, 27, 991A, order no. 66-10,288.

House, P.A. Learning environments, academic self-concepts, and achievement in mathematics. Journal for Research in Mathematics Education, 1975, 6, 244-252.

Osterndorf, L.C., & Horn, P.J. Course Offerings, Enrollments, and Curriculum Practices in Public Secondary Schools, 1972-73. Washington, D.C.: U.S. Government Printing Office, 1976.

Shulte, A.P. The effects of a unit in probability and statistics on students and teachers of ninth-grade general mathematics. The Mathematics Teacher, 1970, 63, 54-64.

West, C.K., & Anderson, T.H. The question of preponderent causation in teacher expectancy research. Review of Educational Research, 1976, 46, 613-630.

PUBLICATIONS

of the

Institute for Research on Teaching
Michigan State University

as of

August 1, 1979

To order any of the following publications please send check, money order, or prepaid purchase order -- payable to Michigan State University -- to: IRT Publications, 252 Erickson, MSU, East Lansing, MI 48824. Publication prices include only the cost of production and mailing. Michigan residents should add a 4% state sales tax to all orders. The Institute for Research on Teaching is funded primarily by the National Institute of Education, United States Department of Health, Education, and Welfare.

Research Series

No. 1 The Inquiry Theory: An information-processing approach to clinical problem-solving research and application. J.F. Vinsonhaler, C.C. Wagner, & A.S. Elstein. 1978. $2.00

No. 2 Impact on what? The importance of content covered. A.C. Porter, W.H. Schmidt, R.E. Floden, & D.J. Freeman. 1978. $1.75

No. 3 Instructions for using the AJ 832 plotting software package as modified for the CDC 6500 computer. M. Carlyn. 1977. $1.75

No. 4 A taxonomy for classifying elementary school mathematics content. T. Kuhs, W. Schmidt, A. Porter, R. Floden, D. Freeman, & J. Schwille. 1979. $2.25 (This is a revision of an earlier publication, Training manual for the classification of the content of fourth-grade mathematics.)

No. 5 Flexner, accreditation, and evaluation. R.E. Floden. 1978. $1.75

No. 6 Analogy and credentialling. R.E. Floden. 1978. $1.25

No. 7 Conceptions of reading: The Rep Test. M. Johnston. 1978. $1.00

No. 8 Research and development needs for the advancement of teacher education. J.E. Lanier & R.E. Floden. 1978. $3.00

No. 9 On the conceptualization of clinical problem solving. C.C. Wagner & J.F. Vinsonhaler. 1978. $1.50

* No. 10 Applications of the Inquiry Theory to reading and learning disabilities. L. Patriarca, J. VanRoekel, & J.F. Vinsonhaler. 1979.

No. 11 Methods for discovering cues used by judges: Two working papers. C.M. Clark & R.J. Yinger. 1978. $1.00

No. 12 Research on teacher thinking. C.M. Clark & R.J. Yinger. 1978. $2.25

No. 13 Data analysis strategies for quasi-experimental studies where differential group and individual growth rates are assumed. S. Olejnik. 1978. $2.75

No. 14 CLIPIR Pilot Observational Study of Reading Diagnosticians, 1976. A. Lee & A. Weinshank. 1978. $2.00 (with complete data, $5.75)

No. 15 The Inquiry Theoretic approach to clinical problem-solving research and application: Basic Management Information System (BMIS) technical manual Vol. 1. J.F. Vinsonhaler, C.C. Wagner, A.S. Elstein, & L.S. Shulman. 1978. $4.50

No. 16 The user's manual for the Basic Management Information System: BMIS technical manual Vol. 2. C.C. Wagner, J.F. Vinsonhaler, A.S. Elstein, & L.S. Shulman. 1978. $17.00

No. 17 Teachers' conceptions of reading: The evolution of a research study. R. Barr & G.G. Duffy. 1978. $1.25 (This paper has been succeeded by Research Series No. 47.)

No. 18 A study of teacher planning: Description and model of preactive decision making. R.J. Yinger. 1978. $4.25

No. 19 Fieldwork as basis for theory building in research on teaching. R.J. Yinger. 1978. $2.25

No. 20 Choice of a model for research on teacher thinking. C.M. Clark. 1978. $1.50

No. 21 Conceptual issues in the content/strategy distinction. D.J. Freeman. 1978. $2.25

No. 22 An econometric perspective on classroom reading instruction. B.W. Brown & D.H. Saks. 1978. $1.75

No. 23 Identifying cues for use in studies of teacher judgment. C.M. Clark, R.J. Yinger, & S.C. Wildfong. 1978. $1.75

* No. 24 Teacher autonomy and the control of content taught. A.C. Porter. 1978. $3.75

No. 25 Don't they all measure the same thing? Consequences of standardized test selection. R.E. Floden, A.C. Porter, W.H. Schmidt, & D.J. Freeman. 1978. $1.50

* No. 26 Critical moments in the teaching of mathematics. J.C. Shroyer. 1978.

No. 27 Characteristics of the clinical problem-solving model and its relevance to educational research. (Formerly available as an IRT collateral paper.) A.S. Elstein, L.S. Shulman, J.F. Vinsonhaler, C.C. Wagner, & L. Bader. 1978. $1.25

No. 28 The consistency of reading diagnosis. J.F. Vinsonhaler. 1979. $2.25

No. 29 Simulated reading and learning disability cases: Effective tools for research and teacher education. L. Patriarca, J. VanRoekel, & L. Lezotte. 1978. $2.30

No. 30 Simulating the problem solving of reading clinicians. D. Gil, C.C. Wagner, & J.F. Vinsonhaler. 1978. $2.30

No. 31 Training reading specialists in diagnosis. G. Sherman, A. Weinshank, & S. Brown. 1979. $2.00

No. 32 Classroom management in the elementary grades. J.E. Brophy & J.C. Putnam. 1978. $3.25

No. 33 An ethnographic study of a teacher's classroom perspective: Implications for curriculum. V.J. Janesick. 1978. $2.25

No. 34 The problem of dead letters: Social perspectives on the teaching of writing. S. Florio. 1978. $1.50

No. 35 Measuring the content of instruction. W.H. Schmidt. 1978. $1.50

No. 36 The relationship of teacher alienation to school workplace characteristics and career stages of teachers. M.J. Vavrus. 1978. $2.50

No. 37 The relationship between diagnosis and remediation in reading: A pilot study. A. Weinshank. 1978. $1.75

No. 38 Teacher judgment of children's reading preferences. T.E. Evans & J.L. Byers. 1979. $2.00

No. 41 Measuring teachers' beliefs about reading. G.G. Duffy & W. Metheny. 1979. $1.75

No. 42 Studies of clinical problem-solving behavior in reading diagnosis. D. Gil, J.F. Vinsonhaler, & C.C. Wagner. 1979. $2.00

* No. 43 Study of the value/belief patterns of teachers and administrators. P. Cusick. 1979.

No. 44 Teacher perceptions of student affect. R.S. Prawat. 1979. $2.50

No. 45 Clinical problem solving in reading: Theory and research. D. Gil, E. Hoffmeyer, J. VanRoekel, J. Vinsonhaler, & A. Weinshank. 1979. $3.30

No. 46 Defining reading diagnosis: Why, what, and how? D. Gil, J.F. Vinsonhaler, & G. Sherman. 1979. $2.00

No. 47 Teacher conceptions of reading and their influence on instruction. R. Bawden, S. Buike, & G. Duffy. 1979. $2.00

No. 48 The potential influence of textbooks on teachers' selection of content for elementary school mathematics. T.M. Kuhs, & D.J. Freeman. 1979. $2.50

* No. 49 The curricular concepts of integration and meaningfulness in reading and writing instruction. W.H. Schmidt, & L. Roehler, 1979.

No. 50 Classroom strategy study: Investigating teachers' strategies with problem children. M.M. Rohrkemper & J.E. Brophy. 1979. $1.25

No. 51 Influence of teacher role definition on strategies for coping with problem students. M.M. Rohrkemper & J.E. Brophy. 1979. $2.00

No. 52 Content decision making and the politics of education. J. Schwille, A. Porter, & M. Gant. 1979. $2.50

No. 53 A closer look at standardized tests. D. Freeman, T. Kuhs, L. Knappen, & A. Porter. 1979. $1.50

No. 54 Survey method and its use in research on general mathematics. G. Belli. 1979. $2.30

No. 55 Three studies of teacher planning. C. Clark & R. Yinger. 1979. $2.50

* No. 56 Planning the school year. C.M. Clark & J.L. Elmore. 1979.

* No. 57 Teaching styles at South Bay school: The South Bay study, Part I. K. McNair & B. Joyce. 1979.

* No. 58 Teachers' thoughts while teaching: The South Bay study, Part II. K. McNair & B. Joyce, 1979.

* No. 59 Teachers' conceptions of pupils: The South Bay Study, Part III. G. Morine-Dershimer. 1979.

* No. 60 Teacher plan and classroom reality: The South Bay Study, Part IV. G. Morine-Dershimer. 1979.

Occasional Papers

No. 1 Teachers' concerns and conceptions of reading and the teaching of reading: A literature review. G. Belli, G. Blom, & A. Reiser. 1977. $2.25

No. 2 Teachers and researchers: Toward a proper division of labor. C. Kennedy. 1977. Limited number of free copies.

No. 3 A causal analysis of attitudes toward leadership training in a classroom setting. J.E. Hunter, R.F. Hunter, & J.E. Lopis. 1978. $2.00

* No. 4 The teacher as colleague in classroom research. S. Florio & M. Walsh. 1978.

No. 5 Form and function in mother-toddler conversational turn-taking. M.L. Donahue. 1978. $1.75

No. 6 Individual school buildings do account for differences in measured pupil performance. L.W. Lezotte & J. Passalacqua. 1978. $1.25

No. 7 Research on teaching: A dynamic area of inquiry. J.E. Lanier. 1978. $1.25

No. 8 Test design: A view from practice. L.S. Shulman. 1978. $1.75

No. 9 Relationships between testing and curriculum. A.C. Porter. 1978. $1.00

No. 10 Psychology and mathematics education revisited: 1976. L.S. Shulman. 1978. $1.75

No. 11 Science and mathematics education: Retrospect and prospect. L.S. Shulman & P. Tamir. 1978. $2.00

No. 12 Relating theory to practice in educational research: A working paper. L.S. Shulman. 1978. $1.75

No. 13 Classroom discipline: Toward a diagnostic model integrating teachers' thoughts and actions. D. Gil & P.S. Heller. 1978. $1.00

No. 14 Attention and modality effects in STM: A second look. T. Evans & J. Byers. 1978. $1.75

No. 15 Mere ethnography: Some problems in its use in educational practice. F. Erickson. 1979. $2.00

No. 16 On standards of descriptive validity in studies of classroom activity. F. Erickson. $2.00

*No. 17 Changes in school characteristics coincident with changes in student achievement. W.B. Brookover & L.W. Lezotte. 1979. $5.00 (Executive Summary $1.00)

No. 18 Advances in teacher effectiveness research. J.E. Brophy. 1979. $2.00

No. 19 Research on teaching in the arts: Review, analysis, critique. L.S. Shulman. 1979. $2.75

No. 20 Unidimensional measurement and confirmatory factor analysis. J.E. Hunter & D.W. Gerbing. 1979. $3.00

No. 21 Using observation to improve your teaching. J.E. Brophy. 1979. $1.50.

No. 22 Patterns of sophistication and naivety in anthropology: Distinctive approaches to the study of education. F. Erickson. 1979. $2.60

No. 23 Teacher centers: The new marketplace for teacher educators? A resounding maybe! L.W. Lezotte. 1979. $2.00

No. 24 Five faces of research on teaching. C.M. Clark. 1979. $2.00

Conference Series

No. 1 Current directions in research on teaching: A meeting of the Invisible College of Researchers on Teaching, November 17-19, 1976. 1977. $4.25

No. 2 Report of a seminar on field research methods in education. P.A. Cusick. 1978. $1.50

No. 3 Proceedings of the Research-on-Teaching Mathematics Conference, May 1-4, 1977. 1978. $8.25

No. 4 Teachers attaining new roles in research: A challenge for the education community. L.D. Shalaway, J.E. Lanier et al., 1978. $3.50

---

*In production and should be available by October 1979. Please write for exact price and publication date. Advance orders can be taken and held until publications are available.